The treatment of retained placenta with an intrauterin suspension

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Abstract
The purpose of this research was to evaluate an intrauterine suspension in the treatment of retained placenta. A therapeutic option that affects, as little as possible the female reproductive life, thus reducing the associated economic implication is the ideal in the treatment of retained placenta. In this study, we analyzed the cases of retained placenta in a farm from Cluj county, the incidence, the diagnosis and the treatment of this pathology in cows. The study was carried out during January 2017-April 2019 and included 216 animals that have calved in that period. Of these, 16 animals were with retained placenta at 12-15 hours after calving, which represents 7.40%. After the treatment, the service period, the number of doses of semen needed for one gestation and the costs of treatment were established.
Keywords: *retained placenta, treatment, intrauterine suspension*

Introduction

Retained placenta is a frequently diagnosed uterine disease in early-postpartum cattle, witch has several different etiologies, including abortion, dystocia, hypocalcemia, twin birth, induction of parturition, placentitis, nutritional disturbance and immunosuppression; thus, retained placenta remains therapeutic challenge in cattle, and alternative options should be considered [8]. Reproductive performance is linked to health in the weeks immediately before and after calving, and timely achievement of subsequent pregnancy in turn has a substantial impact on profitability [16]. Retention of fetal membranes in cattle can lead to adverse health effects that ultimately affect reproductive performance. The definition of retained fetal membranes is varied, ranging from retention of the placenta for 81 to 48 hours postpartum. Most studies define retained placenta in cattle at 12 to 24 hours, and therapy is usually instigated during this time. The majority of cattle (66% in one study) will pass the placenta within 6 hours after parturition [16]. Generally, the dominant approach to retained placenta in cattle in the field is to locally or systemically administer antibiotics. Some authors demonstrated that intrauterine antibiotic treatment is beneficial for metritis prevention in cows affected with retained placenta [8, 14]. Current reports indicate that antibiotic therapy, including intrauterine antibiotics and systemic antibiotics, generally has low efficacy in hastening the separation and expulsion of the retrained placenta [12]. Also, some authors reported that ozonated foam administered into the uterus is useful in treating retained placenta in cows resulting in beneficial effect on puerperal health and fertility [13, 1]. Collagenase therapy is one candidate approach, although it is considered too costly for widespread use [5]. Manual removal of the placenta still remains a common practice despite numerous studies that fail to demonstrate a beneficial effect on reproductive performance or milk yield, manual removal can result in more frequent and severe uterine infections, when compared with more conservative treatment [2]. The most commonly used hormone products in treating retained placenta are prostaglandins and oxytocin. These hormones play a role in uterine contraction, and could be effective in treating this pathology because of uterine atony. However, it is thought that uterine atony accounts for a very small percentage of retained placenta cases [10]. Because retained

placenta negatively affect milk production and cow's fertility, effective treatment is crucial for improving puerperal performance of cows in order to raise their productiveness [15].

The purpose of this research was to evaluate an intrauterine suspension in the treatment of retained placenta.

Materials and method

The study was carried out during January 2017-April 2019 on 216 cows that have calving in that period, in a dairy farm from Cluj County. All the animals were followed after the parturition and if the placenta was not eliminated at 12 hours after the parturition the diagnosis of retained placenta was set. The treatment of retained placenta was performed with an intrauterine suspension (Puerperal) made at the Faculty of Veterinary Medicine of Cluj Napoca. The product Puerperal has in composition: betadine, lincospectine, vitamins, boric acid and kaolin. All the components are important for the health of the uterus and also for rebalance the uterus medium. At all the animals was administered intrauterine 150 ml of Puerperal when the diagnosis of retained placenta was set, after that, were made another 2 administrations at 48 hours. Before intrauterine administration of the product, it is necessary to have a uterine massage to remove some of the content. The cows were monitored for established the service period, the number of doses of seminal material needed for 1 gestation and the costs of treatment.

Results and discussions

The placental retention diagnosis in cows under study was set at 12 to 15 hours post-partum, thus taking the decision to institute the therapeutic protocol. From 216 cows that were monitored a number of 16 (7.40%) animals has been found with retained placenta, 7.78% in 2017, 5.81% in 2018 and 10% in 2019. The situation in each year is presented in Figure 1.

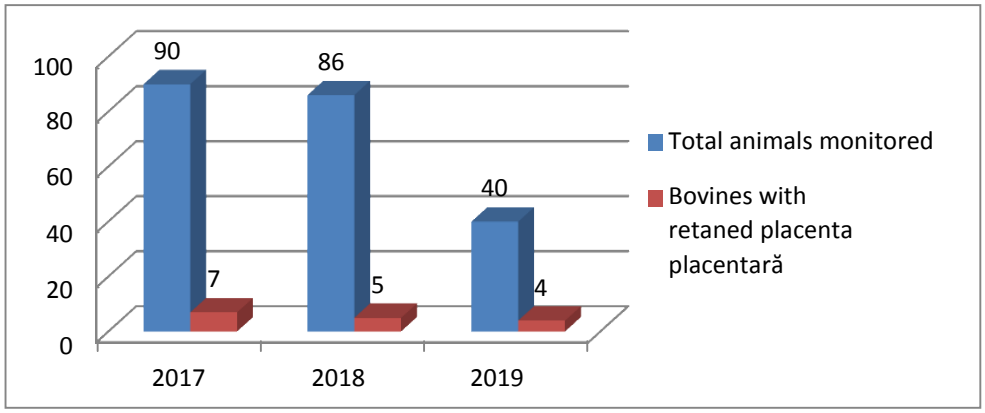

Figure 1. Situation in each year

From the animals with post-partum infection 81.25% were recuperated and 18.75% were out from the study because developed some postpartum infections (Fig.2).

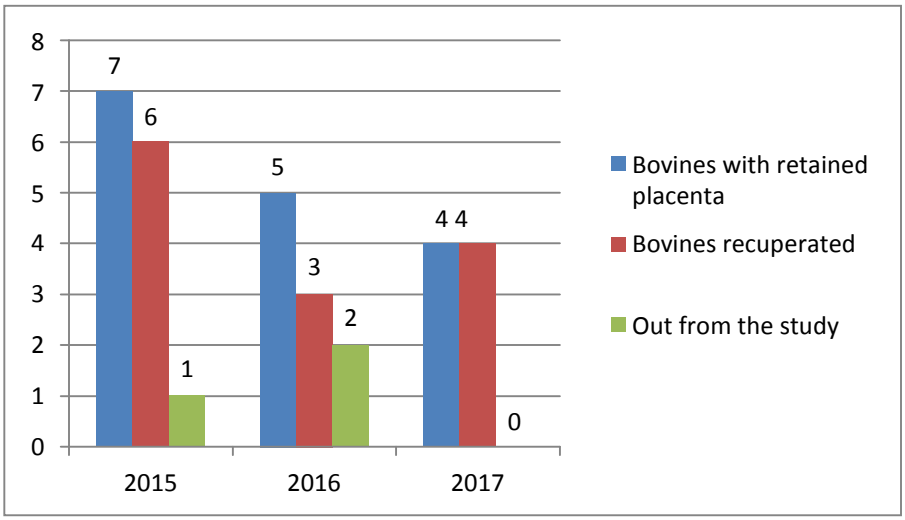

Figure 2. Situation after the treatment

The average of artificial inseminations at the animals with retained placenta was 1.84, in 6 cases was necessary only 1 insemination for obtain a gestation, in 3 cases were necessary 2 inseminations and in 4 cases 3 inseminations (Figure 3).

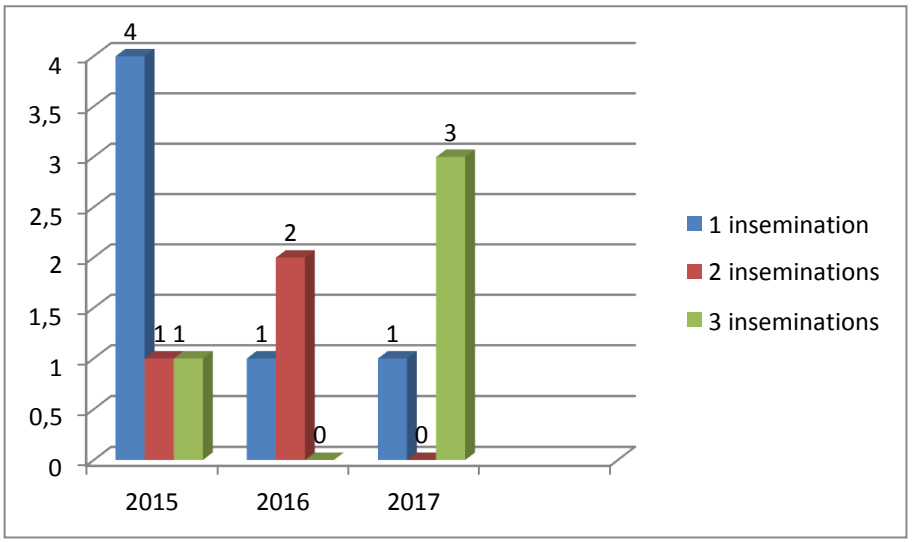

Figure 3. Number of artificial inseminations necessary for 1 gestation in each year

The service period has values in interval between 55 and 129 days with an average of 90.19 days. The situation for all the animals in each year is presented in Figure 4.

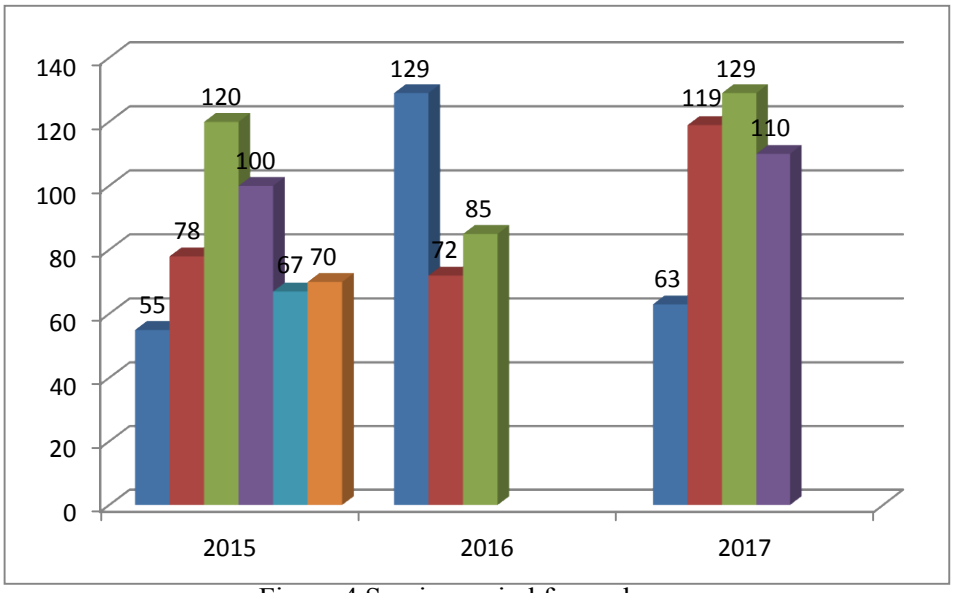

Figure 4 Service period for each cow

The average of cost for 1 animal with retained placenta was 180 RON, cost that included the consultation, the product and the administration of this one. For all the animals the total cost was 2880. For cows treated by a veterinarian, a cost of $244 per affected cow was estimated [7]. Kossaibati and Esslemont [9] calculated the direct cost of a case of retained placenta to be about £ 83, with an over-all cost of £ 298.29, in our study the value of cost was lower by we calculated just the costs with the treatment or the relative economic impact in retained placenta included: decreased milk production (40%), increased veterinary services (32%), increased culling rate (19%), and increased calving interval (9%).

The incidence of retained placenta varies from 4-18% of calving [11]. However, it can be much higher in problem herds and also increases during summer with increased parity, milk yield in the previous seasons and following birth of male fetus [3] Abortions, stillbirths and twin calving resulted in increased incidence rates of 25.9, 16.4 and 43.8%, respectively. In our study, the incidence was 7.40, with the biggest value in the year 2019 when the animals were monitored just in the first part of the year. Irina Garcia-Ispierto and Lopez-Gatius [4] reported 2.7 ± 1.7 artificial insemination for 1 gestation (1–9 inseminations), respectively (mean ± SD, range in parentheses). In our study were necessary 1.84 doses, we put these good results on the fact that we worked on small farms where it is easier to monitor cases. Han and Kim [6] reported a service interval of 83-85 days for the cows with retained placenta, in our research the average of service period was 90.19 days with values between 55 to 129 days.

Conclusions

After the treatment with Puerperal the average number of artificial insemination needed for 1 gestation was 1.84 and the average number of service period 90.19 days. The cost of the treatment with Puerperal for 1 cattle is 180 RON. The results of the study have shown the role of the product in regulating the physiology of the uterus and in increasing the conception rate.

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